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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/601,462

06/23/2003

Takeshi Ishii

8861-470US (P29746-04)

7603

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7590

11/01/2005

AKIN GUMP STRAUSS HAUER & FELD L.L.P.  
ONE COMMERCE SQUARE  
2005 MARKET STREET, SUITE 2200  
PHILADELPHIA, PA 19103

EXAMINER

ALEMU, EPHREM

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/601,462	<b>Applicant(s)</b> ISHII ET AL.	
	<b>Examiner</b> Ephrem Alemu	<b>Art Unit</b> 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 3 and 7 is/are allowed.
- 6) ☒ Claim(s) 2 and 4-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All    b) ☐ Some \* c) ☐ None of:

- ☒ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/03, 1/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed 1/13/05 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Drawings***

2. Figures 10-12 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because the abstract contains phrases, which can be implied, such as, "in accordance with the present invention" in lines 1 and 2. The Office suggests, removing such language from within the content of the abstract to overcome the objection. Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawaguchi et al. (US 5,177,403) in view of Yasuhiro (JP 09293457 submitted by applicant).

Re claims 2 and 5, Kawaguchi discloses a magnetron (Fig. 4) comprising:

a cylindrical anode cylinder (22) being open at one of the ends thereof (Fig. 4; Col. 5, lines 44-50),

a metal cylinder (i.e., metal vessel 29) hermetically sealed at the opening end of the anode cylinder (22) via a magnetic pole piece (Fig. 4; Col. 5, lines 44-61),

a third harmonic restraint cylindrical choke (41) and a fifth harmonic restraint cylindrical choke (40) disposed coaxially inside the metal cylinder (i.e., metal vessel 29) (Fig. 4; Col. 6, lines 13-33),

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a plurality of anode segments (i.e., anode vanes 23) disposed on the inner face of the anode cylinder (22) so as to be directed toward the central axis thereof (Fig. 4; Col. 5, lines 44-61),

an antenna lead (35) connected to a desired position of the anode segment (i.e., anode vanes 23) (Fig. 4; Col. 5, line 66- Col. 6, line 4),

an output portion (i.e., an output portion metal cap 34) connected to the antenna lead (35) passing through the magnetic pole piece and the metal cylinder (i.e., metal vessel 29) so as not to make contact therewith and insulated from the metal cylinder (i.e., metal vessel 29) (Fig. 4; Col. 5, line 63- Col. 6, line 33), wherein

the metal cylinder (i.e., metal vessel 29) and the third harmonic restraint cylindrical choke (41) disposed therein constitute less than  $\frac{1}{2}$  wave choke for a third harmonic frequency band, and the third harmonic restraint cylindrical choke and a fifth harmonic restraint cylindrical choke disposed therein constitute a quarter-wave choke for a fifth harmonic frequency band, and the third harmonic restraint cylindrical choke is open on the side for introducing the antenna lead connected to the anode segment (Fig. 4; Col. 6, lines 13-33).

Kawaguchi does not disclose a small diameter portion being formed on the opening end side of the third harmonic restraint cylindrical choke, and a large diameter portion being formed on the output side of the third harmonic restraint cylindrical choke.

Yasuhiro discloses forming a cylindrical choke (21) having a small diameter portion being formed on the opening end thereof, and a large diameter portion being formed on the output side thereof wherein the cylindrical choke being formed so that the step portion between

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the small diameter portion and the large diameter portion thereof is substantially right-angled for the purpose of restraining radiation of a plurality of spurious electromagnetic wave such as harmonics over a wide frequencies band (Fig. 1; see English translation abstract submitted by applicant)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the third harmonic restraint cylindrical choke of Kawaguchi with cylindrical choke (21) having a small diameter portion being formed on the opening end thereof, and a large diameter portion being formed on the output side thereof as taught by Yasuhiro for the purpose of restraining radiation of a plurality of spurious electromagnetic wave such as harmonics over a wide frequencies band.

Re claims 4 and 6, given Kawaguchi modified by Yasuhiro magnetron, configuring the third harmonic restraint cylindrical choke so that the dimension of the inside diameter of the small diameter portion thereof is not more than  $1/4$  of the wavelength of the third harmonic and wherein the third harmonic restraint cylindrical choke being formed so that the step portion between the small diameter portion and the large diameter portion thereof is inclined would have been obvious for no other reason than suppressing third harmonic waves.

***Allowable Subject Matter***

6. Claims 1, 3 and 7 are allowed.
7. The following is an examiner's statement of reasons for allowance: The prior art of record fail to teach or suggest, alone or in combination, the combination of the following limitations: "the metal cylinder and the third harmonic restraint cylindrical choke disposed therein constitute a quarter-wave choke for a third harmonic frequency band, and the third

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harmonic restraint cylindrical choke and a fifth harmonic restraint cylindrical choke disposed therein constitute a quarter-wave choke for a fifth harmonic frequency band, and the electrical length L1 of said antenna lead from the connection end of the anode segment to the opening end of the third harmonic restraint cylindrical choke is  $1/2$  of the wavelength of the third harmonic” as claimed in claim 1. It is for these reasons in combination with all the other limitations in the independent claim 1, that claims 1, 3, and 7 are allowable over prior art of record.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Choi (US 6,097,154); Aiga et al. (US 5,180,946); Oguro et al. (4,169,987); also teach similar inventive subject matter.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ephrem Alemu whose telephone number is (571) 272-1818. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EA

10-26-05

  
TUYET VO  
PRIMARY EXAMINER  
10/31/05